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Using the RES2020-TIMES Pan European model as basis for national model studies

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RES2020: Monitoring and Evaluation of the RES directives implementation in EU27 and policy recommendations for 2020

Using the RES2020-TIMES Pan European model as basis for national model studies

Northern Europe Final Project Workshop, Risø DTU, 28 August 2009.

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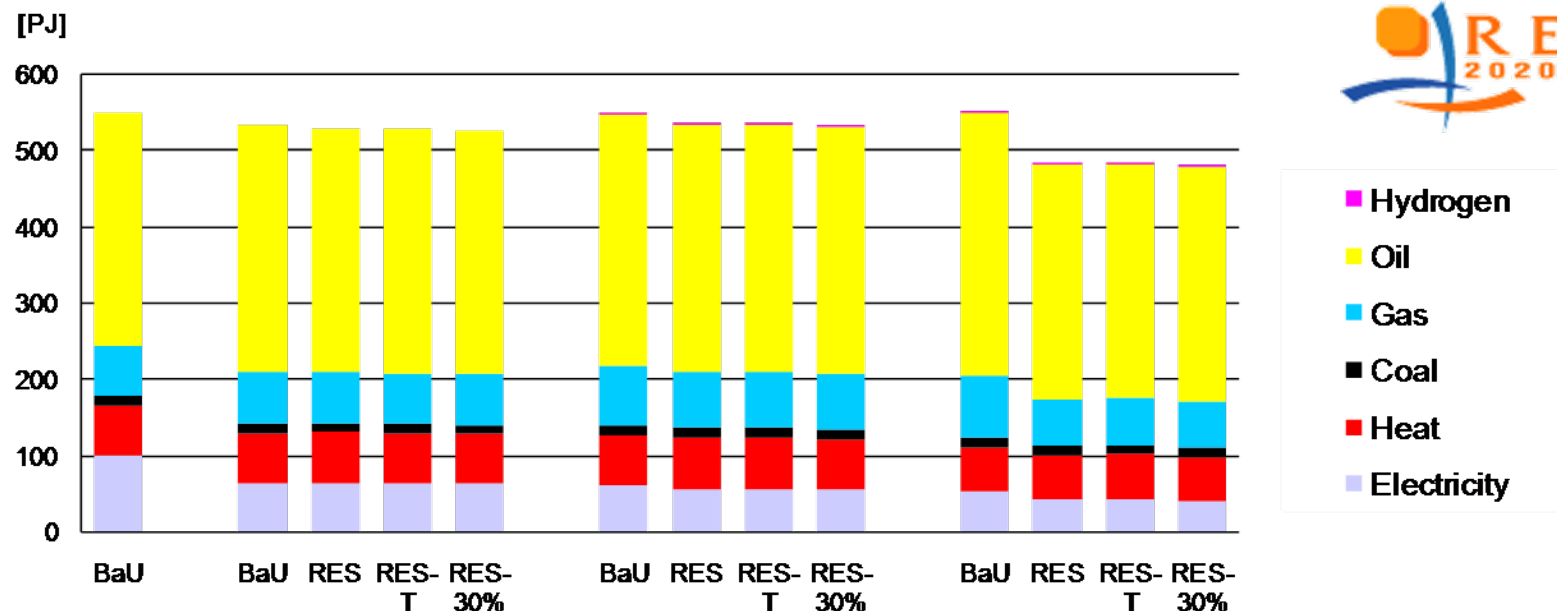
Overview

- Pan European and national models
- RES-2020 results for Denmark
- CCS modelling
- Risø DTU milestone for 2010
- Harmonisation and further development of national models

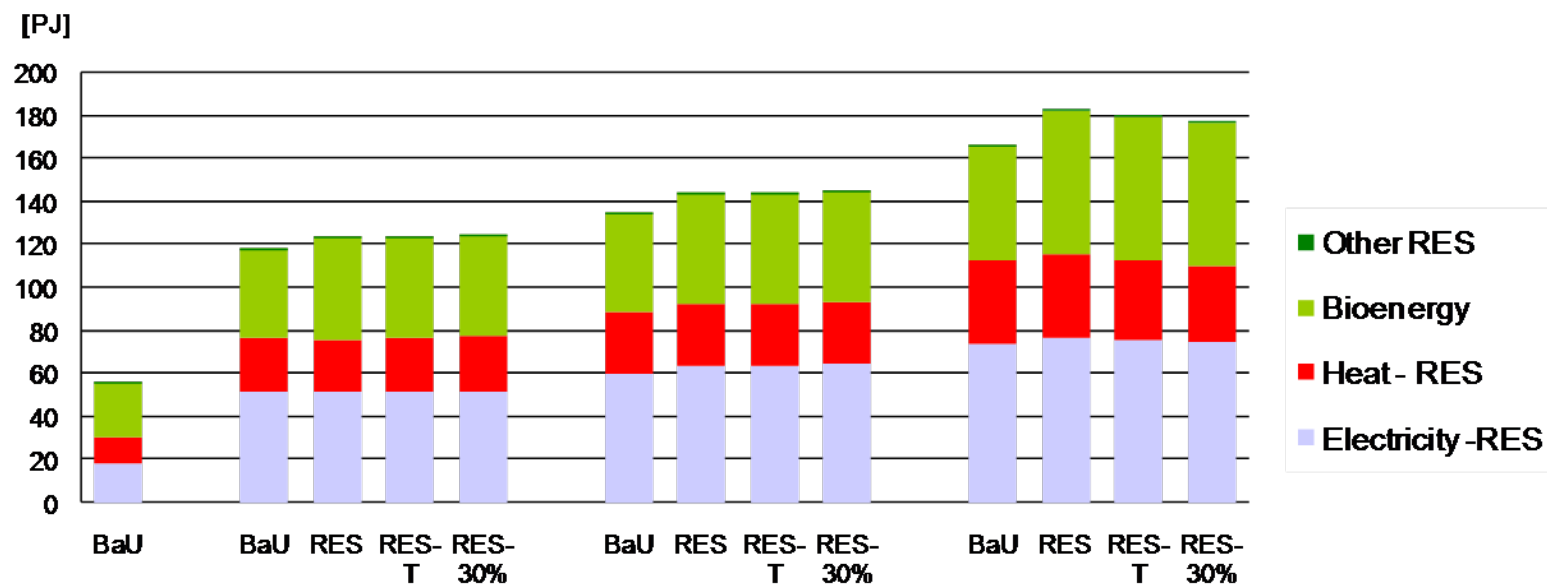
Stepwise development of national and Pan-European models

- Common Base-Year templates with Eurostat 2000 data
- Common data for new technologies
- Demand forecasts by GEM-E3, POLES, etc.
- NEEDS national models submitted to Pan-European model (End 2006)
- First run of Pan-European model (March 2007)
- Harmonisation and modification of national models (until July 2007)
- Scenario results of Pan-European model for EU 27 (October 2007)
- Results of RES2020 Scenario Analyses for EU27 (May 2009)
- Parallel development of national models – national studies (ongoing).
- Regional studies (e.g. Storage Utsira) – 2009
- Need for harmonisation and exchange of experience

Final energy use of non-RES

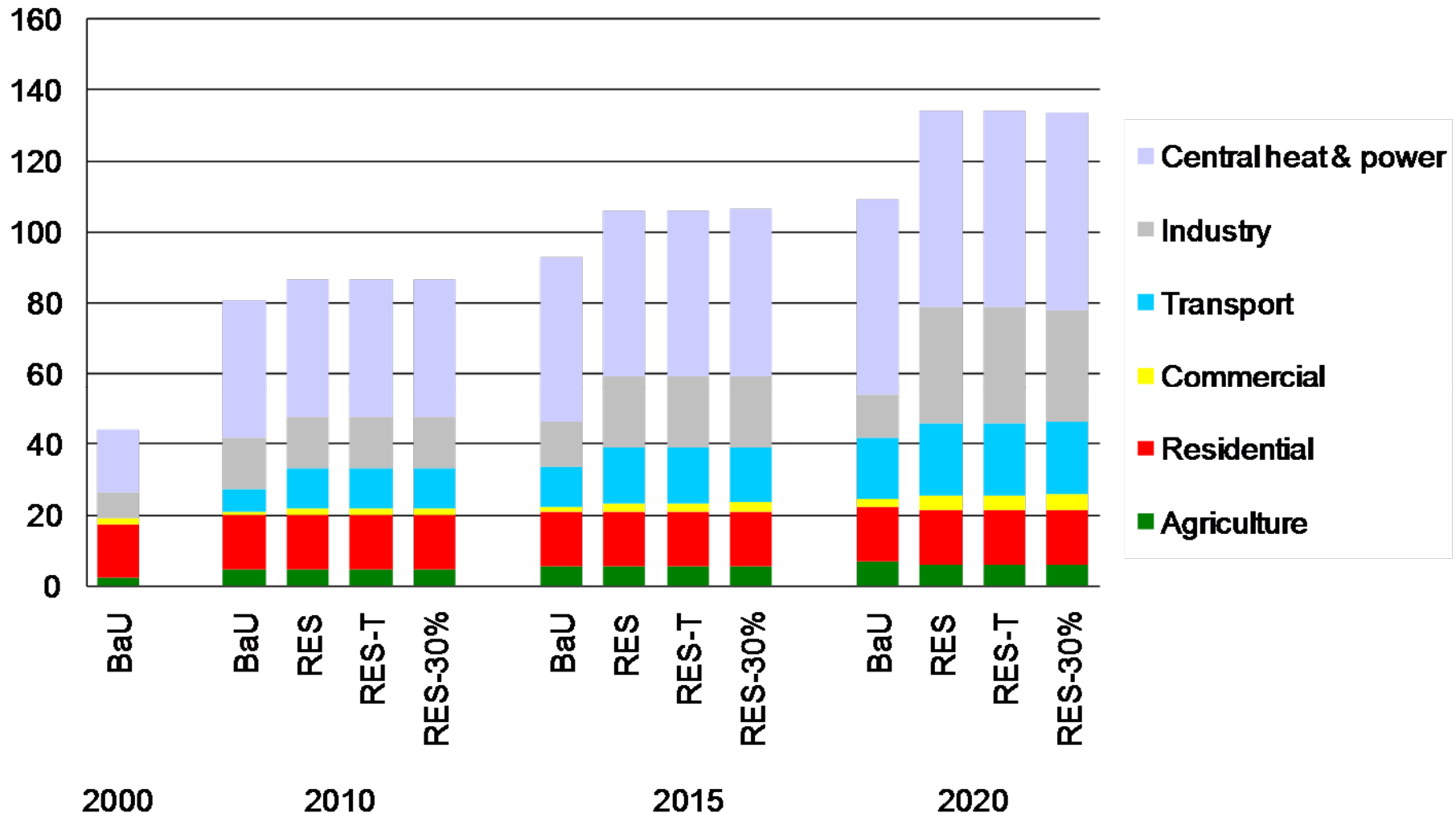


Final energy use of RES



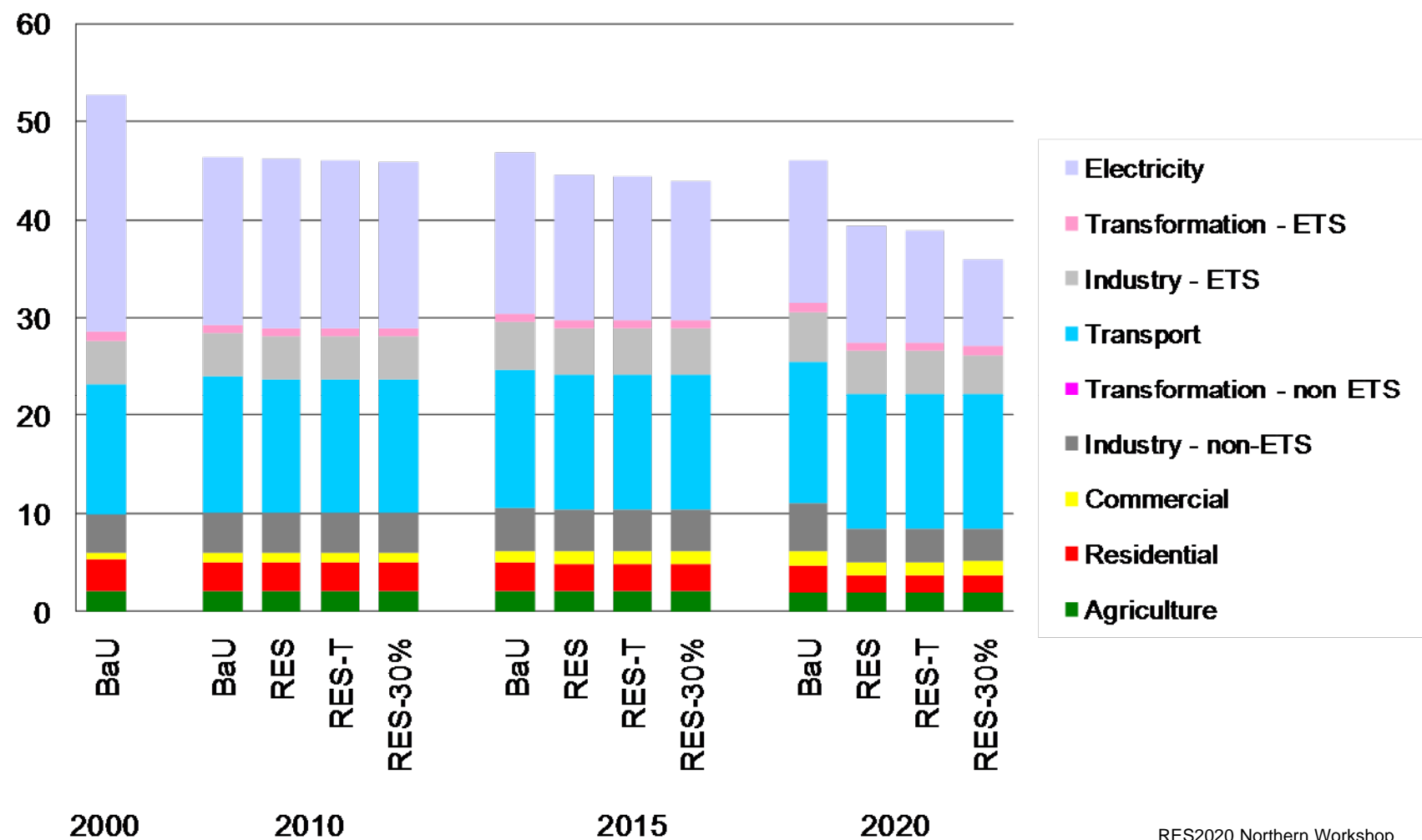
Direct use of RES in each sector

[PJ]



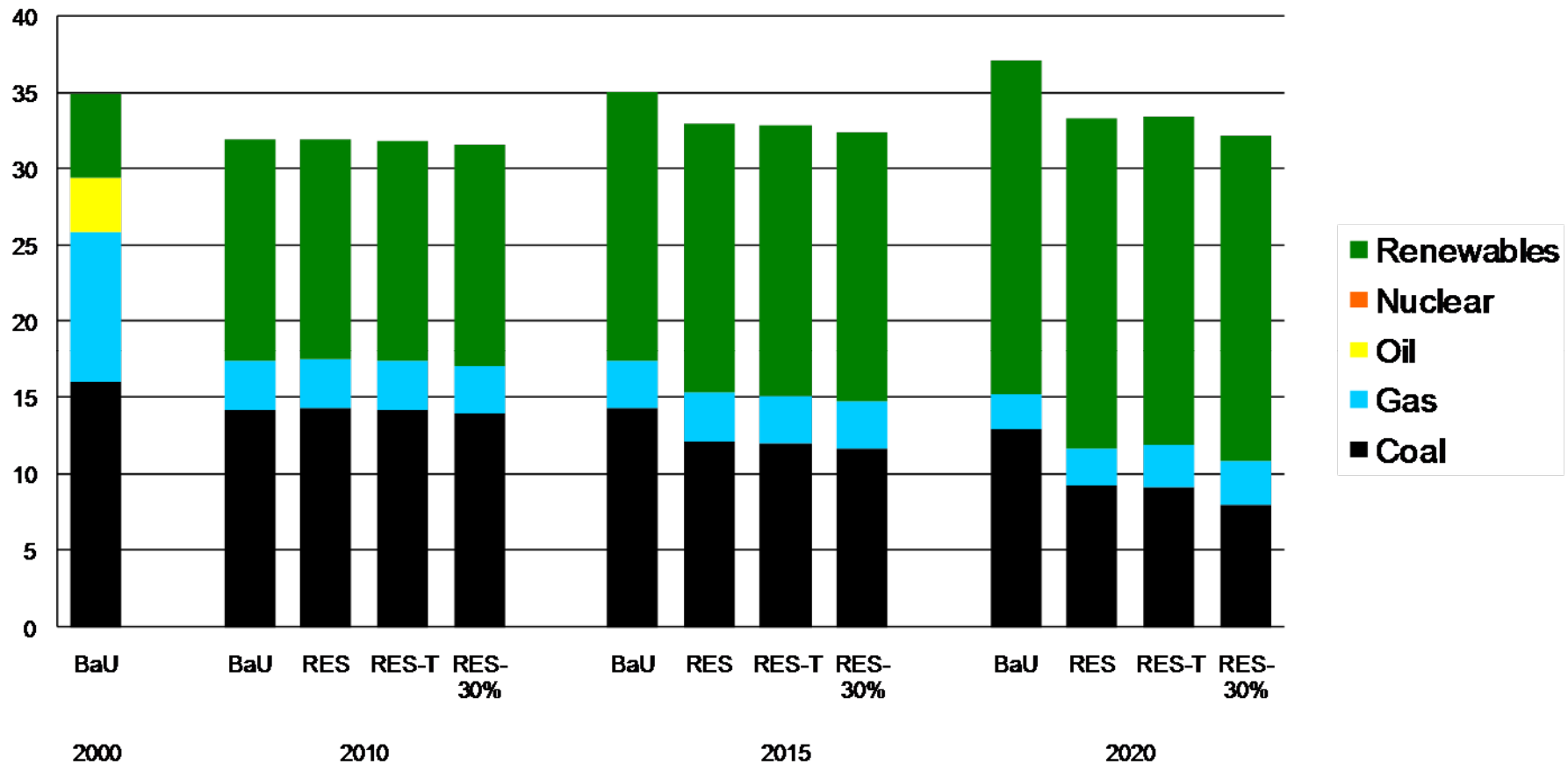
CO2 emissions from each sector

[Mton CO2]



RES2020 Pan Eur model: Total electricity generation for Denmark

[TWh]



Status for the Danish model

- Latest distributed version of RES2020 Pan-European model (time horizon 2050) – November 2008
- Danish model developed in parallel with RES2020 Pan-European model
- Modelling of CHP/DH infrastructure not satisfactory in the Pan-European model
- RES2020-TIMES Pan-European results and national report (time horizon 2020) – May 2009
- Detailed survey of model data and parameters – August 2009
- RES 2020 Northern workshop 28 August 2009
- Continued exchange of experience with the model development for Sweden

CCS and other model issues for Denmark

- Data from forecasts to 2050 from national models (e.g. DTU Climate Centre)
- Model constraints for CHP/DH infrastructure
- Calibration and test of model with comparison to other studies
- Parameters for CHP plants with carbon capture
- Simplified geographical representation of power plants, CO₂ pipes and national CO₂ storage options
- Connection to CO₂ storage in the North Sea
- Harmonisation to other national models within the FENCO-ERANET project "StorageUtsira"
- Implementation of national data for further studies (Risø DTU milestone for 2010)